

New York State Department of Health

Tenant Notification Fact Sheet for Dichloromethane

This fact sheet is provided to fulfill New York State Department of Health (NYS DOH) requirements for preparation of generic fact sheets under Article 27 (Title 24, Section 27-2405) of the Environmental Conservation Law.

Dichloromethane

Dichloromethane (also known as methylene chloride) is a colorless and volatile liquid chemical that has a mild, sweet odor. It is used as an industrial and laboratory solvent, as a paint stripper, and in the manufacture of photographic film. Dichloromethane is also found in aerosol products, adhesives, spray paints, automotive cleaners, and varnish removers.

Sources of Dichloromethane in Indoor Air

Household products containing dichloromethane are a possible source for dichloromethane in indoor air. Another source could be evaporation from contaminated well water that is used for household purposes. Dichloromethane may also enter homes through soil vapor intrusion, which occurs when the chemical evaporates, enters soil vapor (air spaces between soil particles), and migrates through building foundations into the building's indoor air. Dichloromethane has also been found in outdoor air near facilities where it is being produced or used, which can also be a source of the chemical in indoor air.

Levels Typically Found in Air

The NYS DOH reviewed and compiled information from studies in New York State as well as from homes and office buildings across the United States on typical levels of dichloromethane in indoor and outdoor air. Levels of dichloromethane are typically around 5 micrograms per cubic meter (mcg/m³) in the indoor air of homes and offices, but may be somewhat higher as dichloromethane is commonly used in many paint strippers and adhesive products. Levels in outdoor air are expected to be less than 5 mcg/m³.

Health Risks Associated with Exposure

People exposed to high levels of dichloromethane in air for short periods of time had adverse effects on the central nervous system, including dizziness, headache, lightheadedness, confusion, incoordination, drowsiness, prickling or tinkling sensations, and decreased scores on tests that evaluate nervous system function. Long term exposure to high levels of dichloromethane damages the liver and kidneys of laboratory animals. Taken together, the human and animal studies indicate that human exposure to high levels of dichloromethane causes adverse effects on the nervous system, and suggest that long term human exposure to dichloromethane may increase the risk for liver and kidney toxicity.

Studies of long-term human exposure to dichloromethane in the workplace had weaknesses that limited their ability to detect an increased incidence of cancer due to the chemical. Therefore, whether or not dichloromethane cause cancer in humans is unknown. Dichloromethane causes cancer in laboratory animals exposed to high levels over their lifetimes. Overall, data from the human and animal studies suggest that long-term human exposure to dichloromethane could increase the risk for cancer.

NYS DOH Air Guideline

The NYS DOH guideline for dichloromethane in air is 60 mcg/m³. This level is lower than the levels that have caused health effects in animals and humans. The guideline is based on the assumption that people are continuously exposed to dichloromethane in air all day, every day for as long as a lifetime. This is rarely true for most people who, if exposed, are likely to be exposed for only part of the day and part of their lifetime. In setting this level, the NYS DOH also considered the possibility that certain members of the population (infants, children, the elderly, and those with pre-existing health conditions) may be especially sensitive to the effects of dichloromethane.

The purpose of the guideline is to help guide decisions about the nature of the efforts to reduce dichloromethane exposure. Reasonable and practical actions should be taken to reduce dichloromethane exposure when indoor air levels are above those typically found in indoor air, even when they are below the guideline of 60 mcg/m³. The urgency to take actions increases as indoor air levels increase, especially when air levels are above the guideline.

Ways to Limit Exposure to Dichloromethane in Indoor Air

In all cases, the specific actions to limit exposure to dichloromethane in indoor air depend on a case-by-case evaluation of the situation. Removing household sources of dichloromethane and maintaining adequate ventilation will usually help reduce indoor air levels of the chemical. A sub-slab depressurization system can reduce the amount of dichloromethane entering indoor air by soil vapor intrusion. Use of an activated carbon filter on the water supply can reduce the amount of the chemical in contaminated well water that could evaporate into indoor air.

Reportable Detection Level

The reportable detection level for a chemical can vary depending on the analytical method used, the laboratory performing the analysis, and several other factors. Most laboratories that use the analytical methods recommended by the NYS DOH for measuring dichloromethane in air (and approved by the National Environmental Laboratory Accreditation Conference or New York State's Environmental Laboratory Approval Program) can routinely detect the chemical at concentrations below 1 mcg/m³.

Additional Information

Additional information on dichloromethane, ways to reduce exposure, indoor air contamination resulting from soil vapor intrusion, indoor and outdoor air levels and the Environmental Conservation Law can be found on the NYS DOH website at

www.health.state.ny.us/environmental/indoors/air/contaminants/.

If you have further questions about dichloromethane and the information in this fact sheet, please call the NYS DOH at 1-518-402-7800 or 1-800-458-1158 (extension 2-7800), e-mail to ceheduc@health.state.ny.us, or write to the following address:

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